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1. To expend, or allocate and direct the administration of, such funds as may be voted by Parliament for scientific investigations into questions affecting the common interests of the sea fisheries of the United Kingdom.

2. To draw up such schemes of investigations as the council shall from time to time deem desirable for the solution of practical problems affecting the sea fisheries generally.

3. To arrange for such statistical investigations as the council may deem desirable with the departments charged with the duty of collecting fishery statistics, and to place so far as practicable such statistics on a uniform basis throughout the United Kingdom.

4. To arrange for the coordination of schemes of investigations under their direction with any similar schemes undertaken by other nations interested in fisheries frequented by British fishermen.

5. To select, direct and, if necessary, to equip any agents for the conduct of such investigations as they may require to be carried out.

6. To take over or acquire vessels properly equipped for fishery investigations.

7. To present to the treasury and to each of the ministers having charge of fishery departments an annual report on the progress of the investigations under their direction and on the results from time to time obtained.

SCIENTIFIC NOTES AND NEWS

THE honor of knighthood has been conferred on Professor A. G. Greenhill, F.R.S., the eminent mathematician of the Ordinance College, Woolwich.

SIR WILLIAM RAMSAY was made an honorary doctor of medicine at the University of Jena on the occasion of the celebration of the three hundred and fiftieth anniversary of its foundation.

DR. GEORG QUINCKE, professor of physics at Heidelberg, and Dr. Friedrich Hildebrand, professor of botany at Freiburg, have celebrated the fiftieth anniversary of their doctorates.

DR. REYE, professor of mathematics at Strasburg, has retired from active service.

DR. HENRY M. HURD, superintendent of the Johns Hopkins Hospital, has been appointed a member of the Maryland state lunacy commission, vice Dr. Charles F. Bevan, retired.

PROFESSOR G. W. WILSON, of Upper Iowa University, Fayette, Iowa, has held during July and August a research scholarship at the New York Botanical Garden.

A PRIZE founded in honor of the late J. P. Moebius, the neurologist, will be conferred for the first time next year.

M. ANTOINE HENRI BECQUEREL, the eminent French physicist, has died at the age of fifty-six years.

KANSAS City has begun work upon its new Zoological Gardens, which it is said will be completed in the course of the next five years at a cost of about \$500,000.

MRS. REID, widow of the late Thomas Reid, who was president of the Bermuda Natural History Society and mayor of Hamilton, has given \$2,500 to the Bermuda Aquarium and Biological Station.

PRESS dispatches state that Count Zeppelin has announced that he intends to found an institute for the investigation of the problems of air navigation in the interest of German industry, defence and science. The contributions made by the public, he says, are now far beyond the sum necessary to replace the destroyed airship and beyond the sum he intends to accept toward the recuperation of his private fortune which was spent in airship experiments. All of the surplus now on hand and all further contributions will be added to the endowment of the institute. The Bank of Stuttgart, which is receiving the subscriptions, has \$500,000 deposited to Count Zeppelin's credit, and about \$250,000 has been subscribed but not yet paid.

A CONGRESS on thalassotherapy, or treatment of disease by sea air, sea bathing, etc., will be held next September at Abbazia, near Fiume, on the southern coast of Austria.

At a meeting consisting of representatives of temperance organizations interested in the International Anti-alcohol Congress, which has been held during the past twenty years

in various continental towns, it was agreed to invite the congress to meet next year in London for the first time. That invitation having been accepted, arrangements are now being made for the twelfth congress to be held during the week beginning July 18, 1909. The congress, which is to last a week, will probably meet at the Imperial Institute, and the delegates will be present from nearly every country in the world.

DR. W. D. MATTHEW, one of the members of the American Museum Expedition to Nebraska, has recently returned from the field. The investigations of the party have been confined mainly to the Miocene beds of Sioux County. Much interesting material has been collected from the Lower Miocene in the vicinity of Agate; and farther to the south, Dr. Matthew and Mr. Harold Cook discovered two new fossil-bearing levels from which were obtained collections especially rich in fossil horses. Several incomplete skeletons of the Middle Miocene horse have been secured, together with abundant fragmentary material from a higher level which may prove to represent a new and large fauna that hitherto has been very little known.

THE expedition to James Bay and vicinity by Mr. Alanson Skinner, for the American Museum of Natural History, has obtained not only ethnological material from the Cree Indians, but much new information regarding their religious and social customs. The Cree are essentially hunters, and the complete set of specimens brought back by Mr. Skinner will add greatly to the ethnological interest of the collections already installed in the museum halls. Mr. Skinner's attempt to study the Naskapi (a little-known tribe) was fruitless, as the Indians no longer frequent the east coast of Hudson Bay, but remain in the country bordering the Atlantic. The members of the expedition covered more than a thousand miles in an eighteen-foot canoe, and narrowly escaped starvation while returning through the forests of northern Canada.

ACCORDING to the Paris correspondent of the London *Times*, the *Pourquoi Pas*, conveying the Charcot mission on the second voyage of

discovery of its commander, Dr. Francois Charcot, to the Antarctic regions, left the port of Havre on August 16. Some 30,000 persons bade it God-speed from the quays, and a little company of distinguished guests were present at this dramatic leave-taking. Among them were M. Doumer, whose intervention secured from the French parliament a subsidy of \$160,000 for the expedition. Dr. Charcot expects to be absent about two years. One of his objects in returning to the regions of the South Pole is to bring back samples of the fossils to which Dr. Nordenskjöld has already drawn attention. He intends to transport them to one of the open ports of the Antarctic continent, either Port Lockroy or Port Charcot, and then to go on to Loubet Land to begin his exploration of the regions to the south. He takes with him provisions for twenty persons for more than two years. The *Pourquoi Pas* will reach the southern ice at the beginning of the austral summer towards December 15, at about 800 kilometers south of Cape Horn. Dr. Charcot's staff will then have their work cut out for them. They include M. Bougrain, who will make the astronomical observations; M. Rouch, specialist in meteorology and oceanography; M. Godefroy, who will study the hydrography of the coast and the tides; M. Gourdon, geologist, and Dr. Jacques Liouville, marine zoologist and botanist. The commander himself is a good bacteriologist.

THE measures devised by the governor of Uganda, Sir Henry Hesketh Bell, for combating the spread of sleeping sickness are, according to Reuter's Agency, meeting with a considerable measure of success. During 1907 there were no new cases among Europeans, and the deaths among natives during the twelve months numbered less than 4,000. The whole of the population has been removed from the shores of the Victoria Nyanza, and it is hoped that the disease-carrying fly in that belt, if not reinfected, will gradually cease to be a source of danger. Several thousands of the sufferers from sleeping sickness are being maintained in segregation camps, but the treatment by atoxyl is not proving of much avail. Consistent and vigorous action will be

necessary for some years to come if sleeping sickness is to be stamped out of the country.

THE United States not only produced 96.6 per cent. of all the salt consumed within its borders in 1907, but exported nearly 62,000,000 pounds, valued at more than a quarter of a million of dollars, according to W.C. Phalen, whose report on the salt and bromide industry of this country for the last calendar year has just been published by the U. S. Geological Survey. The salt production of the United States in 1907 amounted to 29,704,128 barrels of 280 pounds, valued at \$7,439,551—an increase of 1,531,748 barrels in quantity and of \$781,201 in value over the output in 1906. The average net value of the product in 1907 was \$1.79 cents per short ton, as against \$1.69 per ton, in 1906, an increase for 1907 of 10 cents per ton. In both quantity and value of output the United States stands at the head of the salt-producing countries of the world. In quantity the United Kingdom, the German Empire, and France rank next, in the order given, although the value of both the German and the French output exceeds that of the United Kingdom.

A TOTAL output far in excess of that of any previous year or any other country, an unparalleled accumulation of stocks, and high prices for oil of all grades characterized the petroleum industry of the United States in 1907, according to David T. Day, of the United States Geological Survey. The total production of petroleum in this country in 1907 amounted to 166,095,335 barrels, an increase of 39,601,399 barrels over the production of 1906, the increase being greater than the total product of petroleum in any year up to 1889. The total value increased from \$92,444,735 in 1906 to \$120,106,749 in 1907. The average price decreased slightly, from \$0.731 per barrel in 1906 to \$0.723 in 1907.

THE London *Times* states that long before the flight of his fourth airship Count Zeppelin had been laying his plans for the construction of his fifth balloon. Ten or twelve weeks ago he entrusted Messrs. C. G. Spencer and Co., the well-known manufacturers and

aeronauts of Highbury, with the task of making the balloon fabric. The work is in full progress in the works at Highbury. In the factory a number of girls are engaged in preparing the goldbeaters' skin from which the Zeppelin balloon No. 5 is to be made. The envelope will be composed of six layers of the skin, and by a process known only to the firm the skins are so joined together that no seams are visible, and the finished fabric combines extreme lightness with an extraordinary degree of toughness. Mr. Spencer said that the cells, or gas holders, of No. 5 balloon were being built like a very large drum, and were divided into 15 sections, each being self-contained. The holding capacity of these would be 40,000 cubic feet, so that the whole balloon—600,000 feet—would be considerably larger than that of No. 4. There would be sufficient room in the building for the inflation of each section separately. The sections would then be packed carefully and sent to Germany to be fitted into the rigid framework of Count Zeppelin's airship. Mr. Spencer said that this goldbeaters' skin is the strongest material for its weight that could be found. Hitherto Count Zeppelin had relied, he said, upon an indiarubber-covered fabric, but though this is cheaper it is three or four times heavier. It is estimated that the skins of about 600,000 cattle will be required before the work is finished. The firm expects to finish the fabric in about a fortnight.

ACCORDING to a report recently issued, the total number of visits recorded as having been made by the public to the Natural History Museum (London) during the year 1907 was 497,437, as compared with 472,557 in 1906—an increase of 24,880. The number of visits on Sunday afternoons was 66,367, as against 61,151 in the previous year. The average daily attendance for all open days was 1,370.3; for week-days only, 1,386; and for Sunday afternoons, 1,276.3. The total number of gifts received during the year by the several departments of the museum was 2,105, as compared with 2,057 in 1906, among the donors being the Egyptian government (an important series of fishes from the Nile); the Prince of

Wales (the skeleton of an Indian elephant from Mysore); the Hon. W. Rothschild (a mounted specimen of a bull of the Alaskan elk); and Mr. Boyd Alexander, in the name of the Alexander-Gosling expedition (the skin and skull of a male Okapi, and portions of the skin of two other individuals of the same species, obtained by him during his recent journey from Nigeria to the Nile).

As a result of a recent conference between representatives of the War Department and the Forest Service, looking toward the practise of forestry on timberlands on military reservations, the Forest Service has received requests from Fort Mead, South Dakota, and Fort Leavenworth, Kansas, for an examination of the forests at those posts. The service will suggest a plan of management in each of these instances, as well as for other posts from which similar requests are received. Military reservations which have been examined and reported upon in the past are those at West Point, New York; Fort Wingate, New Mexico; the Rock Island Arsenal, Illinois, and the Picatinny Arsenal, New Jersey. The forest at West Point, for which the Forest Service made a working plan in 1903, is supplying the post with part of the needed cordwood, lumber, hurdle poles, tan bark and other forest products. Similar plans are in preparation for the forests of Rock Island and Picatinny Arsenals.

THE results of the French scientific mission to the Congo for the study of the sleeping sickness, recounted in the *Dépêche Coloniale Illustrée*, are abstracted in the *London Times*, according to which that mission, under the charge of Dr. Gustave Martin, did not get seriously to work before June of last year. It has had to struggle against the inertia and often the ill-will of the natives. In the region of the Upper Ubangi and the basin of the Gribingi and the Shari they found only isolated cases. On the other hand, in the immense country of the Middle Congo, the Sanga, and the Ubangi up to the sea there are no points where the plague has not exercised its ravages, devastating entire villages. The members of the mission have personally visited

the caravan routes from Brazzaville to Loango up to Buanza, Madingu, and the mountainous region between the copper zone of Minduli and the former political post of Manganga, the Upper Alima, the Lower Sanga, part of the valley of the Congo, and the Upper Ubangi as far as Fort de Possel and Bessu. As a general result of their observations it is evident, says the present report, that no diagnosis of the sleeping sickness is certain without the revelation of the presence in the organism of the trypanosome. The best microscopic method of discovering the presence of the microbe is a problem which has absorbed the attention of the mission. By the mere microscopic examination of the blood 258 natives were found harboring the microbe and twenty Europeans were discovered to be infected. The director of the laboratory department of the Pasteur Institute, M. Mesnil, says, indeed, in his report on the preliminary studies of the French mission, that minute examination of the blood of all Europeans who have spent some time in the tsetse zones is an operation that ought not to be neglected. No vaccine nor serum avails to cure the sleeping sickness. The future belongs to chemical therapeutics, and the atoxyl treatment is the only one which, according to this authority, gives generally good results. This remedy was first employed by Mr. Thomas in 1905 at the Liverpool School of Tropical Medicine, although the action of arsenical compounds in animal trypanosomiasis had already been recognized by numerous investigators. At the same time certain inconveniences, already noted at Liverpool, in the use of atoxyl alone are confirmed by the French mission. The French mission, aided by the government and the geographical societies, proposes a certain number of practical preventive measures. A sum of 250,000f. is now being solicited to continue the work already begun and to place France on an equality with the other powers in the struggle against this terrible plague.

Nature quotes from the *Comptes rendus* of the Paris Academy of Sciences for June 29 the report of the committee appointed to consider the distribution of the Bonaparte fund

for 1908. The committee has considered 107 applications for assistance from this research fund. Some of these, it is mentioned, do not comply with the conditions laid down by the founder, Prince Roland Bonaparte, and others are for work entirely outside the field of the Academy of Sciences. The committee excludes also demands for assistance in researches in medicine, surgery and general biology, since the funds of the *Caisse des Recherches scientifiques* are exclusively reserved for biological studies. Ten grants are recommended as follows: (1) 2,000 francs to L. Blaringhem for a continuation of his important studies on the variation of species and the experimental methods for the creation of new species of plants; (2) 2,000 francs to Dr. Billard to enable him to pursue his studies on the hydroids; (3) 2,000 francs to Dr. Estanave to furnish him with a means of continuing his researches on direct vision projection in relief, with special reference to radiography; (4) 2,500 francs to MM. Fabry and Buisson for a continuation of their work on the establishment of a system of standard wave-lengths. The grant is to be applied to the purchase of a plane grating, a metal concave mirror of large diameter, and two plane mirrors required for a study of the differences between the lines of the solar spectrum and those of the electric arc; (5) 5,000 francs to M. Gonnessiat for the purchase of astronomical instruments for the observatory of Algiers; (6) 2,000 francs to Dr. Loisel for the continuation of his actinometric observations at the Observatory of Juvisy; (7) 2,000 francs to M. Dongier for the establishment of apparatus for the simultaneous study of the rainfall and atmospheric potential; (8) 2,500 francs to M. Perot for the spectroscopic study of the light from the sun by interferential methods; (9) 2,000 francs to M. Matignon for the determination of specific heats at high temperatures; (10) 3,000 francs to P. Colin for the publication of a map of South Imerina. These recommendations were adopted by the academy.

A COMMISSION, appointed by the crown to investigate the condition of Ireland's forests

and to suggest measures for bettering it, has just made public its report. The commission became convinced that there was imperative need for afforestation on a large scale, that the time had come when the "let alone" doctrine applied to the woods could no longer be endured. The commission outlines and vigorously urges the adoption of a large scheme for the state to plant about 700,000 acres with forest trees. This, with the 300,000 acres of existing forest, would give Ireland 1,000,000 acres of forest land, an area which the commission considers essential for the agricultural and industrial requirements of the country. About 20,000 acres of this would be purchased by the state in mountainous and rough regions and managed as state forest, while 500,000 acres, chiefly in small blocks, would be planted by the state, but managed by private owners or by county councils. The facts that under the Land Purchase Acts much woodland formerly held in large blocks is being sold in small parcels and lumbered, and that there is now opportunity for the government to acquire woods and land suitable for forests, make it specially urgent for the state to take immediate action. To show that such a scheme of land acquisition and planting is not impracticable, the Commission cites the case of Denmark, an agricultural country half the size of Ireland, which, since 1881, has increased her forests by 175,000 acres. Another case is that of little Belgium, which, in spite of her dense agricultural and industrial population and already large forests, has added 70,000 acres to her forests in the last twenty-five years. Though Ireland is particularly suited in soil and climate for the growth of forests, and some of her area is much better adapted for forests than agricultural crops, yet only 306,000 acres, or one and one half per cent. of her total area is forested.

UNIVERSITY AND EDUCATIONAL NEWS

AN anonymous gift of \$100,000 has been made to the Vienna Academy of Sciences for the establishment of a "Radium Institute" in connection with the new physical laboratories of the University of Vienna.